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REPORT OF GENERAL SERVICE WORK AND EXTENSION

FOR CALENDAR YEAR 1940

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compiled by

W. D. Bedard
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Bureau of Entomology and Plant Quarantine

Forest Insect Laboratory
445 U. S. Court House
Portland, Oregon
March 7, 1941

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CONTENTS

	Page
Introduction	1
Insects affecting forest trees	2
Insects affecting forest products	4
Insects affecting shade and ornamental trees	7
General entomology	8
Unclassified	8
Tables	9
Species index	11

REPORT OF GENERAL SERVICE WORK AND EXTENSION FOR CALENDAR YEAR 1940

This is the fifth annual summary of requests for general entomological information that have been received at the Portland forest insect laboratory. The object of this series of reports is twofold. First, the recording of the various requests serves to account for the considerable amount of time that is necessarily spent in general service work. Second, by summarizing the requests annually it is possible to assemble much valuable information on certain minor forest insect pests in the region.

The same method of treatment employed in previous reports has been followed in this one. That is, all requests are included except those for specific published material, or those concerning control and surveys originating from cooperators.

During 1940, a total of 311 separate requests were received, which involved the writing of 93 letters, the distribution of 84 copies of 19 different publications, and necessitated 12 personal examinations. One hundred and ninety-five (62 percent) of the total number were in the field of forest entomology. As compared with 1939, there was an increase of 62 calls (23 percent) in the total number, but the proportion of forest insect problems remained practically constant. A portion of the total increase resulted from the closing of the Fort Collins laboratory which shifted some of the service work from that region to the Portland laboratory.

During 1940 there was a slight decrease of 14 (13 percent) in the number of letters that were sent, a decrease of 288 (76 percent) in the number of publications, reports, etc., and a decrease of 18 (60 percent) in the number of personal examinations. In explanation of the drastic reduction in volume of printed material, the mimeographed report, "Forest Insect Conditions in Oregon and Washington, 1933-1938" was completed during 1939 and 304 copies were sent out that year. A similar digest of forest insect conditions is contemplated for 1941.

As in the past, a number of valuable records were obtained. Some of the more noteworthy of these are: (1) A record of Dendroctonus brevicomis Lec. west of the Cascade mountains in Oregon, (2) an increase in the number of reports of Buprestis spp. infesting buildings, (3) continued abundance of Camponotus spp. as the subject of the greatest number of calls, (4) a marked increase in calls

regarding borers emerging from cordwood, (5) an unusual case of Cossonus pacificus Van Dyke causing damage in cedar shingles, and (6) a record of extensive damage by Trachykele opulenta Fall. to cedar poles on the Willamette National Forest.

Other service and contact work included several talks on various phases of the station program. A number of forestry and entomological meetings were attended. A meeting of the Oregon Entomological Society was held at the laboratory, during which the laboratory was inspected and the staff members explained their respective projects.

INSECTS AFFECTING FOREST TREES

A total of 36 requests, an increase of 3 over last year, were received concerning 15 species in this group of insects.

Dendroctonus brevicomis Lec. On December 4, 1940, an examination was made of a native grove of ponderosa pine growing on gravel flats along the Willamette River, eight miles south of Corvallis, Oregon. Prof. W. F. McCulloch of Oregon State College first noticed one tree dying about a year ago and since then many trees have died. Examination proved that the trees had been attacked by D. brevicomis. Living broods were found in several large trees in one group and were thought to be present in the tops of others. A few parent adults were found, but broods were mostly in the full grown larval stage in the outer bark.

This record is of special interest because Hopkins recorded D. brevicomis from western Oregon and Washington, but it has not been noted in this region during recent years until the present record from Corvallis.

Dendroctonus pseudotsugae Hopk. Only two requests were received concerning the Douglas fir beetle during 1940. One of these was a report from Mount Rainier National Park, where three groups of trees had been killed along the Yakima-Park highway. An examination was made of this area during June, but no control was recommended owing to the sporadic character of these outbreaks west of the Cascades.

The other request came from a timber owner near Willamina, Oregon, who reported dying Douglas-fir. It was found that group killing had occurred two years ago, probably as a result of the Tillamook burn. No current killing was apparent.

The outbreaks of D. pseudotsugae and Melanophila drummondi (Kby.) which occurred in 1939 along the central and southern Oregon coast had apparently subsided during 1940 as no reports were received concerning them. It was suspected that these had developed from a population increase in trees that were killed by numerous large fires that burned along the coast during the fall of 1936.

Ips perturbatus Eichh. On January 13, 1940 a letter was received from the Alaska Fire Control Service, transmitting bark samples and beetles from white spruce (Picea glauca) which had been killed by Ips perturbatus. It was stated that 225 acres of almost pure spruce near Fairbanks were affected and that from 25 to 35 percent of the stand had been killed. It was also the opinion of the fire warden that other outbreaks were occurring throughout the interior of Alaska.

Scolytus ventralis Lec. The Yakima Indian Agency at Toppenish, Wash., reported an outbreak of the fir engraver beetle, which normally maintains itself at a high level throughout white fir stands. Considerable killing of white fir had occurred, but owing to the fact that this insect develops in living trees, it is impractical to control.

An increase in the amount of damage by this insect was noted during 1939 by laboratory staff members on the Wallowa National Forest. This outbreak had subsided to the usual high level when examined during 1940.

Malacosoma spp. Most of the widespread outbreaks of several species of tent caterpillars which occurred in Washington and Oregon during 1939, continued in severity during 1940. Fourteen requests concerning them were received in 1940 as compared with three in 1939. The majority of these requests were in regard to an outbreak of M. disstria Hbn. which occurred in and around Portland during May. This was probably a continuation of the outbreak which caused two requests in 1939. As in 1939, the caterpillars were feeding on the foliage of fruit and ornamental trees.

M. pluvialis Dyar, which was extremely abundant in the Puget Sound Basin of Washington and moderately abundant along the Oregon coast in 1939, continued in about the same intensity during 1940. One request reported M. pluvialis defoliating willow, alder and fruit trees near Olympia, Wash. Another report of this insect came from Otis, Oregon, where it was leaving native trees to feed on strawberry plants.

The epidemic of M. fragilis (Stretch) on bitterbrush (Purshia tridentata) on the Deschutes National Forest, Oregon, which was reported in 1939, was controlled by natural factors. An examination of the area in 1940 showed little evidence of the severe defoliation which characterized the infestation during the past two years.

No reports or records were obtained concerning the moderate infestation of M. constricta Stretch on oaks which was noted in the Rogue River Valley in Josephine County, Oregon during 1939.

Hemerocampa pseudotsugata McD. Although no inquiries were received concerning the fir tussock moth, year by year comparisons of the status of some of the more common species will provide a valuable continuous record. An outbreak of this insect was reported in 1938 on the Malheur National Forest, where it was defoliating Douglas-firs and true firs. This epidemic increased greatly during 1939, but during the summer some unknown factor caused a very heavy mortality among the large larvae and no evidence of defoliation was apparent during 1940.

Another extensive outbreak of H. pseudotsugata was discovered in 1939 near Spray, Oregon, on the Umatilla National Forest. No evidence of current defoliation could be found in this area during 1940. Since the affected trees were only partially defoliated in 1939, they are rapidly recovering from the injury and show only slight twig and terminal mortality.

INSECTS AFFECTING FOREST PRODUCTS

Inquiries concerning insects affecting forest products far outnumbered those in any other group, and within the group calls regarding carpenter ants were foremost again. A total of 141 requests were received, as compared with 107 in 1939.

Camponotus spp. Fifty calls were received concerning carpenter ants in buildings as compared with 38 in 1939. No specific determinations were made, but sodium fluoride dust was recommended for control in all cases. Reports indicated that this usually proved effective when properly applied in the colony under perfectly dry conditions. Some failures to obtain effective control probably resulted from improper application of the recommended control.

Termites. Seventeen cases of infestation by termites were reported. Six of these were by Zootermopsis angusticollis Hagen, one was Reticulitermes hesperus Banks, and no specific determination was made in the other ten cases. No severe damage was reported, and in most cases repair and prevention of further damage was obtained through minor structural changes.

The R. hesperus record came from a home in Portland where several wooden members in the basement had been damaged by this termite. These had entered by means of tubes which extended from beneath a cement porch. The colony was found beneath the porch.

Powder-post beetles. Reports of damage caused by these beetles were slightly less abundant than in 1939. Twelve cases were reported. The articles infested were: Flooring, seven cases; furniture, three cases; myrtlewood burls, one case; and bamboo Venetian blinds, one case. Lytoxylon japonum was the insect involved in the damage to Venetian blinds. No other specific determinations were made.

The damage to myrtlewood burls may become a problem of considerable economic importance. The myrtlewood burls are often stored for several years and represent a considerable investment to the owners of small wood-turning factories where the burls are worked up into novelty products.

Wood borers emerging from buildings. Reports of damage to homes by wood-boring beetles doubled in number during the past year. A total of sixteen inquiries from Portland were received. Ten of these involved Buprestis spp. of which two were determined as B. aurulenta L., and six cases involved Criocephalus spp. It is believed that the more abundant records of damage by these insects results from the fact that infested material has been used more commonly in the construction of new homes in and about Portland during the past few years. As a result, the insects are now emerging from the infested material, boring through door and window trim, veneer walls and hardwood floors to effect their emergence.

In the case of Criocephalus, which does not originate attacks on wood products but merely completes development in material cut from infested logs, it is suspected that much of the infested material has been cut from fire-killed timber, especially from the Tillamook Burn. Concerning Buprestis, experimental evidence indicates that freshly sawed and even seasoned lumber will be attacked. Hence,

damage by Buprestis may result either from the use of infested material in home construction, or from actual attack on exposed wood surfaces. Both types have been recorded, and an interesting case of development for 19 years in a door casing was noted.

Work on the biology of Buprestis spp. is now being conducted at Pack Forest, Wash., with the object of discovering methods of prevention and control.

Trachykele opulenta Fall. On April 20, a report from the Willamette National Forest stated that damage by borers in western red cedar on portions of the forest had been increasing in severity during the past three or four years. It was stated that in certain districts the infestation had progressed to such an extent that the bulk of the timber would be valueless unless salvaged within a very few years. Material submitted with the report permitted the identification of the insect causing the damage as T. opulenta, one of the cedar pole borers.

An examination was made on August 24, which verified the seriousness of the situation. Rules governing the grading of cedar poles are so severe that even slight borer damage prevents the use of the pole. If at all possible, a study of this problem will be undertaken.

Cossonus pacificus Van Dyke. Two inquiries regarding damage by this insect in western red cedar shingles were received. These originated from two areas where old dead cedar was being used for shingle manufacture, the Cossonus galleries becoming evident when the bolts were cut into shingles. Mining of the heartwood was so extensive as to prevent the use of infested wood for shingle manufacture. One request came from the Crown-Willamette Paper Company in Oregon, and the other from the Koma Kulshan Ranger Station at Concrete, Wash., where shingles were being cut from fire-scorched trees adjacent to a 1923 fire. As far as is known, these are the first records of damage caused by this insect.

Leperisinus sp. During August living specimens of Leperisinus, which appeared to be aculeatus, were brought in for identification. These were found among a shipment of nut bowls. No damage was recorded, but it is of interest to note how readily this eastern species could have been transplanted to the west coast.

Colopterus truncatus (Rand) On July 11, 1940, specimens of this insect were sent in by the West Coast Lumbermen's Association with the report that they had been attracted in large numbers to lumber which had been treated with urea in experimental work on the chemical seasoning of Douglas-fir lumber. The green lumber had been dipped in a concentrated solution of pure crystal urea and then placed in solid pile for three days. At the end of this period these insects were found in large numbers in the pile and in smaller numbers on untreated wood piled next to the treated wood.

Wood borers emerging from cordwood. A decided increase occurred in the number of inquiries concerning woodborers emerging from cordwood stored in basements. A total of 34 requests was received during 1940 as compared with 14 in 1939. The following were definitely identified: Neoclytus conjunctus (Lec.) 10 cases, Phymatodes sp. 4 cases, P. obscurus Lec. 2 cases, P. decussatus var. obliquus Lec. one case, Semanotus litigiosa Csy. one case, Pseudopityophthorus sp. one case, Pityophthorus sp. one case, Criocephalus sp. one case, Xylotrechus sp. one case, X. nauticus (Mann.) 2 cases, Xeris sp. and Sirex sp. one case. Since elimination of adult beetles in homes is all that is desired, fly spray was recommended for control.

These pests have considerable nuisance value, and fuel companies are interested in ways of reducing the amount of infestation in fuel wood. A study is needed to determine what influence time of cutting, especially of hardwoods, may have upon borer infestation.

INSECTS AFFECTING SHADE AND ORNAMENTAL TREES

Eighteen requests were received concerning insects in this group as compared with 19 during 1939.

Sternochaetus lapathi (L.) This introduced pest continued to be found attacking willows and poplars in the vicinity of Portland. One report of infestation was received.

Adelges cooleyi Gill. Five reports of this insect were received. Trees attacked were Douglas-fir, Engelmann spruce and Sitka spruce in Oregon and Washington.

Argyresthia cupressella Wesm. Two cases of defoliation of ornamental cypresses by this needle miner were reported, one from Portland and one from Seattle.

Leptocoris trivittatus (Say). Two reports were received concerning infestations of the box elder bug on ornamental box elder bushes.

Rosalia funebris Mots. Two cases of the California laurel borer were reported. No damage was concerned in the inquiries. Adult beetles had merely been collected and brought in for identification because of their striking appearance.

Stilpnothia salicis (L.) The satin moth has been quiescent during the last few years. Only scattered records were obtained in 1937, none were received in 1938 and 1939, and only one record by a member of the laboratory staff was made in 1940. This concerned an infested Populus alba tree in a yard along the highway one mile west of Mossy Rock, Wash. On July 12, at the time of examination, all moths had emerged and deposited eggs. Only a few adults remained alive. The tree had been about one quarter defoliated.

Galerucella xanthomelaena (Schr.) A continuing control against this defoliator is necessary within the city of Portland to reduce the amount of damage it causes to ornamental elms. The city's spray program has been highly successful, and only one inquiry concerning this insect was received during 1940.

GENERAL ENTOMOLOGY

A total of 72 entomological problems in other fields than forest entomology were received. Only one of these is of particular interest in this report.

Trachyphloeus bifoveolatus Beck. This weevil was first reported from Portland in 1937, which, according to Mr. L. L. Buchanan, constituted the first record of this European species west of the Mississippi. It has since been collected annually from this locality, but in September 1940 an extensive migration occurred in the southeast portion of the city. One report stated that the weevils were so abundant as to cover the sidewalks in passing over them. No records were obtained relative to food plants or habits.

UNCLASSIFIED

Forty-four inquiries, such as control for poison oak, etc., fall into the unclassified group.

RESUMÉ OF REQUESTS

Classification	Number of Requests
Insects affecting forest trees	36
Insects affecting forest products	141
Insects affecting shade and ornamental trees	18
General entomology	72
Unclassified	44
Total	311

OCCURRENCE OF REQUESTS BY MONTHS, 1937-40

Month	1937	1938	1939	1940	Average Distribution Percent
January	5	14	8	13	4.0
February	3	12	9	16	4.0
March	6	10	22	26	6.4
April	7	29	45	50	13.2
May	23	51	36	54	16.5
June	9	24	39	28	10.0
July	36	31	22	36	12.5
August	28	29	31	33	12.2
September	21	23	14	19	7.8
October	18	13	18	17	6.6
November	13	7	13	10	4.3
December	2	7	7	8	2.4
Unaccounted	1	—	—	—	0.1
Total	172	250	264	309	100.0

PUBLICATIONS, CIRCULARS, BULLETINS, ETC., SENT OUT DURING CALENDAR YEAR 1940

Type of article and designation	Title	Number sent
Insects affecting forest trees		
Reprint	Relative susceptibility of ponderosa pines to bark beetle attack.	21
Mimeographed	Forest insect conditions in Oregon and Washington, 1933-1938	8
Miscellaneous Publication 273	Insect Enemies of western forests	8
Extract from F.S. Handbook	Control of the western pine beetle	5

Type of article and designation	Title	Number sent
Insects affecting forest products		
Farmers bulletin 1472	Preventing damage by termites or white ants	5
Leaflet 101	Injury to buildings by termites	4
Farmers bulletin 1582	Protection of log cabins, rustic work, and unseasoned wood	2
Farmers bulletin 1477	Preventing damage by Lyctus powder-post beetles	1
Insects affecting shade and ornamental trees		
Leaflet 184	The elm leaf beetle	3
Farmers bulletin 1495	Insect enemies of the flower garden	3
Farmers bulletin 1169	Insects injurious to deciduous shade trees and their control	2
Leaflet 185	Elm bark beetles	2
Circular 459	Effectiveness of imported insect enemies of the satin moth	1
General entomology		
Leaflet 147	House ants	10
Leaflet 149	Silverfish	2
Leaflet 150	Carpet beetles	2
Leaflet 145	Clothes moths	1
Farmers bulletin 740	House ants	1
Unclassified		
Reprint	Climatic cycles in eastern Oregon as indicated by tree rings	3
	Mimeographed articles giving general information	Several
	Articles answering requests for material on student theses	Several
	Total	84

INDEX TO SPECIES

Species	Page
Adelges cooleyi Gill	7
Argyresthia cupressela Wesm	8
Buprestis aurulenta L.	5
Buprestis spp	5
Camponotus spp	4
Colopterus truncatus (Rand)	7
Cossonus pacificus Van Dyke	6
Criocephalus spp	5
Dendroctonus brevicomis Lec	2
Dendroctonus pseudotsugae Hopk	2
Galerucella xanthomelaena (Schr.)	8
Hemerocampa pseudotsugata McD	4
Ips perturbatus Eichh	3
Leperisinus sp	6
Leptocoris trivittatus (Say)	8
Lytoxylon japonum	5
Malacosoma constricta Stretch	4
Malacosoma disstria Hbn	3
Malacosoma fragilis (Stretch)	4
Malacosoma pluvialis Dyar	3
Malacosoma spp	3
Melanophila drummondi (Kby.)	3
Neoclytus conjunctus (Lec.)	7
Phymatodes decussatus var. obliquus Lec	7
Phymatodes obscurus Lec	7
Phymatodes sp	7
Pityophthorus sp	7
Pseudopityophthorus sp	7
Reticulitermes hesperus Banks	5
Rosalia funebris Mots	8
Scolytus ventralis Lec	3
Semanotus litigiosa Csy	7
Sternochaetus lapathi (L.)	7
Stilpnothia salicis (L.)	8
Trachykele opulenta Fall	6
Trachyphloeus bifoveolatus Beck	8
Xylotrechus nauticus Mann	7
Xylotrechus sp	7
Zootermopsis angusticollis Hagen	5

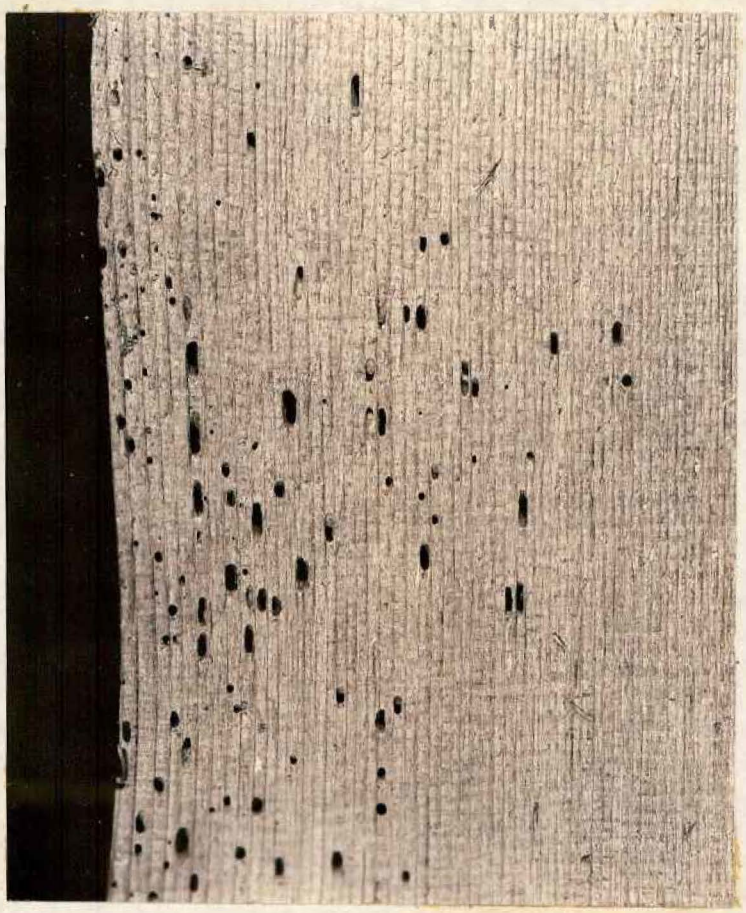

Fig. 1.--Western red cedar shingle cut from fire-scorched tree. Damage by Cossonus pacificus Van Dyke. (Natural size)

Fig. 2.—Section of door casing damaged by Buprestis aurulenta L. All evidence in this case pointed to the fact that larvae had been developing in this material since 1922. (Reduced to half size)